

A NEW TWO-CHANNEL RECORDER WITH ADVANCED ELECTRONICS DESIGNED FOR PROFESSIONAL STEREOPHONIC SOUND—IN COMBINATION WITH THE MOST THOROUGHLY PROVEN AND RESPECTED OF ALL COMMERCIAL TAPE TRANSPORTS.



# THE AMPEX 354 NEW ADDITION TO A GREAT SERIES



351—MONAURAL  
RECORDER/REPRODUCER



352—MONAURAL  
REPRODUCER



351-2—STEREOPHONIC  
RECORDER/REPRODUCER



352-2—STEREOPHONIC  
REPRODUCER—2 TRACK



352-2/4—STEREOPHONIC  
REPRODUCER  
2 TRACK & 4 TRACK



# MODEL 354 ELECTRONICS AND CONTROL FEATURES

● Compactness of the new two-channel electronics and power supply (7" x 19") permits mounting in console, in a small portable case, in one section of a large portable case (allowing room for mixer or accessories), or into same rack space as a single channel recorder.

● More convenient monitoring and balancing of stereo channels is made possible by the side-by-side position of the V-U meters which allows simultaneous reading of both channels. Meters are illuminated and are of same quality as meters on the 351.

● Record-mode indicating light can be seen even at extreme angles since they project out from the face of the recorder.

● Master power switch controls both transport and electronics.

● Channel A & B phone monitor jacks are arranged so stereo headset with three-circuit plug can be inserted in either jack to hear both channels or standard two-circuit plug inserted in one or the other to hear A or B.

● Reset indicator on record level controls permits return to a previous level.

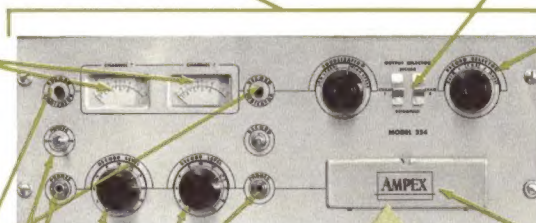
● Government specifications for corrosion resistance are met by yellow dichromate finish on all exposed chassis areas.

● All head and power connectors on electronic chassis are each of a different type to insure correct interconnection of transport and electronics.

● Input and output connectors are of reliable XL type.

● Etched-circuit electronics are mounted on a durable epoxy board which in turn is shock mounted to the chassis. Removal is simple if ever required.

● Shielding of power transformer assures low noise in the electronics assembly.



● Quick A-B comparison can be made between original and recorded program by selector switches which transfer V-U meters, monitoring and output circuits from record to playback.

● Record selector permits erase-record of either track individually (as in half-track recording, sound on sound, language teaching, etc.), or both tracks can simultaneously be used for stereo record and reproduce. Protection against erasure is provided by "safe" positions on selector which inactivate the record button.

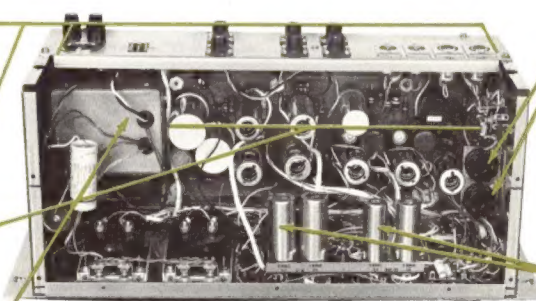
● All electronic alignment controls are accessible from an exclusive front-panel door eliminating the need to work from the back of a rack mounted unit or to remove electronics from consoles or cases for adjustments.

● As further protection against accidental erasure, record relay inactivates both bias oscillator and record head amplifiers by cutting plate voltages.

● Complete access to all wiring, top and bottom, is made possible by removable bottom plate and hinged front and rear panels. All soldered connections on the etched circuit board can be unsoldered and replaced without removing the circuit board from the chassis.

● Optional plug-in preamplifiers (or balanced-bridge input transformers) permit a wide latitude of adaptation for desired input characteristics. Since dummy plugs only are used for unbalanced line or high level input, the total cost of the recorder is reduced for those users whose installations always provide high level input such as the MX-35 Ampex Mixer or similar input systems.

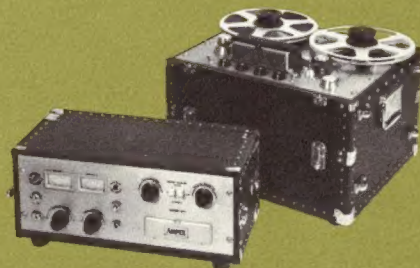
● Exclusive plug-in equalizers provide NAB, AME or CCIR curves appropriate to the tape speed used, and equalizers for still other curves will be available on special order. Switch selects for high or low tape speed.



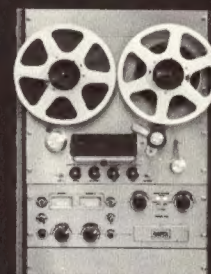
## TYPES OF MOUNTING



354 CONSOLE



354 PORTABLE



354 RACK MOUNTED



# WHY AMPEX DEVELOPED THE MODEL 354

Ampex engineers recognized a need for a recorder designed *specifically* for recording and reproduction of stereophonic sound. Other makes and models currently produced use adaptations of single channel electronics with resultant space and stereo-feature limitations. The new 354 electronics (1) provides maximum of convenience and flexibility; (2) is ideal both for recording professional stereo and for the many two-channel recording techniques now being applied to monaural use.

## Two channels of electronics in one convenient panel

One dual-channel chassis now fits into exactly the same space as the single-channel electronics of the Model 351, making possible a *two-channel console model*, a *much more compact and convenient portable version*, and a *rack mount version that fits into the same rack space previously occupied by a single-channel recorder*. Many other new features are described on the opposite page.

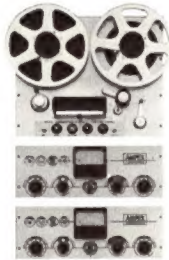
## A new recorder with thoroughly proven mechanics

Since the requirements of the tape transport are the same for either single or two-channel use—and since utmost reliability is essential in a professional recorder, the new 354 uses the same highly regarded tape transport that has proven itself in over 9,000 of the 350/351 series recorders in heavy-duty and critical professional use throughout the world. The user gains the assurance that comes from a thoroughly proven design.

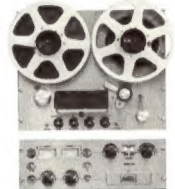
## COMPARISON OF THE 351-2 AND 354

The model 354 expands the Ampex line and is offered as a new alternative to the 351-2. Both are professional stereophonic recorder/reproducers. Both are of the same high quality and outstanding durability. And both have the same performance specifications. The *difference* is in *application features*. The major feature differences are compared below to assist you in choosing the machine best fitting your needs. (See detailed features on Page 3.)

# 351-2



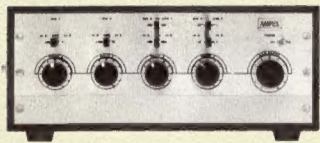
# 354



Same	BASIC PERFORMANCE SPECIFICATIONS	Same
Basic to the series	TAPE TRANSPORT	Same (see 351 literature—Bulletin 203)
Same (new, high density)	HEADS	Same (new, high density)
Two panels, each 7" x 19"	ELECTRONICS PANELS	One panel, 7" x 19"
Two 4-inch professional meters, each on a separate chassis	V-U METERS	Two 3-inch professional meters side by side for easy comparison and balancing of channels
Two pushbuttons	RECORDING CHANNEL SELECTION	Selector switch
Built-in, switchable	MICROPHONE INPUTS	Plug in (optional)
Built-in, switchable	BALANCED LINE INPUT	Plug in (optional)
+8 or +4 dbm	NOMINAL OUTPUT LEVEL	+4 dbm
+25 dbm	MAXIMUM PLAYBACK OUTPUT	+22 dbm
37 lbs.	WEIGHT OF ELECTRONICS	22 lbs.
Rack and portable only	MOUNTING	Rack, portable and CONSOLE
Back of chassis	ELECTRONIC ADJUSTMENTS	Front of panel



# ACCESSORIES



## MX-35 MIXER

Compact four-position, two-channel professional mixer operating from four low-Z microphone inputs and two unbalanced line inputs. Switching control permits each input to feed either the left or right, or split to feed equally into both channels. For more inputs, two or more of these mixers can be coupled, with overall master gain controlled by last unit in the system. (Available September 1960.)



## REMOTE CONTROL

Unit permits greatly expanded concept of studio recorder operation by duplicating functions of the record, play, fast forward and fast rewind buttons on the tape transport—hence allowing the recorder to be operated from two or more locations. Indicator lights on controls show play and record modes. Record button, like that on the recorder, is prevented from functioning when the record selector is in 'safe' position. Remote control available either in box or flush plate for mounting on studio control panel.



## PLUG-IN EQUALIZERS

These interchangeable units provide NAB, AME, or CCIR curves appropriate to the tape speed used. Equalizers for other curves to meet special requirements or to match non-standard recorders will be available on special order (or can be assembled by the user).



## PLUG-IN INPUT UNITS

Interchangeable units to match various inputs as follows: zero loss transformer plug-in for balanced bridging; 40 db miniaturized microphone pre-amplifier for normal pick-up conditions and/or high input microphones; 60 db miniaturized microphone pre-amplifier for distant pick-up conditions or low output microphones.

# SPECIFICATIONS MODEL 354

**IMPORTANT:** AS PROFESSIONAL EQUIPMENT, THE AMPEX 354 IS DESCRIBED BY SPECIFICATIONS LISTED BELOW WHICH ARE ACCURATE MEASUREMENTS REQUIRED BY NAB STANDARDS AND DO NOT INCORPORATE ANY EXAGGERATED SALES CLAIMS. THESE ARE THE GUARANTEED MINIMUM PERFORMANCE SPECIFICATIONS THE CUSTOMER CAN EXPECT IN LONG-RANGE OPERATION.

**HEADS:** Two-channel Erase, Record, Playback.

**TAPE SPEEDS:** 7½ and 15 ips, or 3¾ and 7½ ips

**FREQUENCY RESPONSE:**  
15 ips ± 2 db 30 to 18,000  
7½ ips ± 2 db 40 to 12,000  
3¾ ips ± 2 db 40 to 8,000

**SIGNAL TO NOISE RATIO:** Peak recorded level to unweighted noise  
15 ips = 55 db Based on overall system, from  
7½ ips = 55 db record input to playback output.  
3¾ ips = 50 db

**CROSSTALK REJECTION:** 65 db at 400 cycles

**FLUTTER AND WOW:** 15 ips well below 0.15% RMS 7½ ips well below 0.2% RMS 3¾ ips well below 0.25% RMS

**STARTING & STOPPING TIMES:** Start: 1/10th second; Stop: within 2 inch tape travel after stop button is depressed.

**TIMING ACCURACY:** Within ± 0.2% (± 3.0 seconds in a 30 minute period).

**RECORD INPUTS:** Unbalanced bridging: 100k ohms input impedance requiring minimum signal of -5dbm to produce operating level.  
(TWO) Balanced bridging: Using an accessory plug-in transformer; 20k ohms input impedance.  
Microphone: Two sets of miniaturized plug-in microphone pre-amplifiers are available as accessories to convert line input to balanced microphone input; for use with low impedance microphones (50 to 200 ohms); minimum input signal for operating level is 4.5 millivolts on low (40 db) gain unit and .45 millivolts for the high (60 db) gain unit.

**PLAYBACK OUTPUTS:** Zero indication on the V-U meter corresponds to +4dbm into 600 ohms balanced or unbalanced load. Overload margin is maintained by providing a maximum output of +22dbm before clipping.

**MONITORING:** Independent record and playback systems allow tape to be monitored while recording. Phone jacks are provided to monitor channel A or B independently. Or by means of stereo headsets with 3 circuit plug, either jack will provide stereo monitoring.

**POWER REQUIREMENTS:** 2 amperes at 117 volts AC. Machines are available for either 50 or 60 cycles.

**MOUNTING STYLES:** Console, rack (or unmounted), or two-case portable.

**RACK SPACE:** Tape transport 15¼ inches, electronics, 7 inches. Both are 19 inch wide panels for rack mounting. Unrated weight 80 lbs.

**CONSOLE DIMENSIONS:** 48" high x 24½" wide x 28½" deep—weight 155 lbs. (crated 200 lbs.).

**PORTABLE WEIGHT:** 103 lbs. total in two cases.

# AMPEX

AUDIO PRODUCTS DIVISION

AMPEX PROFESSIONAL PRODUCTS COMPANY

934 Charter Street • Redwood City, California • EMerson 9-7111